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(54) Boxes or cases

(57) A lidded box or case comprises two substantially identical hollow mouldings (1) preferably of glass-fibre reinforced plastics material having cooperating surfaces (2)

around the openings (3) therein, the cooperating surfaces (2) being adapted to interfit to positively locate one moulding relative to the other and said mouldings being engaged with each other with said surfaces (2) in abutting cooperating relationship. A sealing strip (6) may be provided.

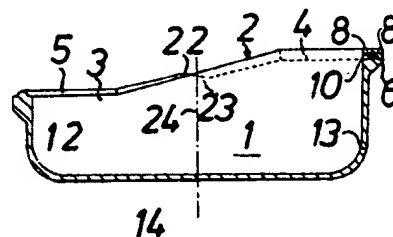


Fig. 4

The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

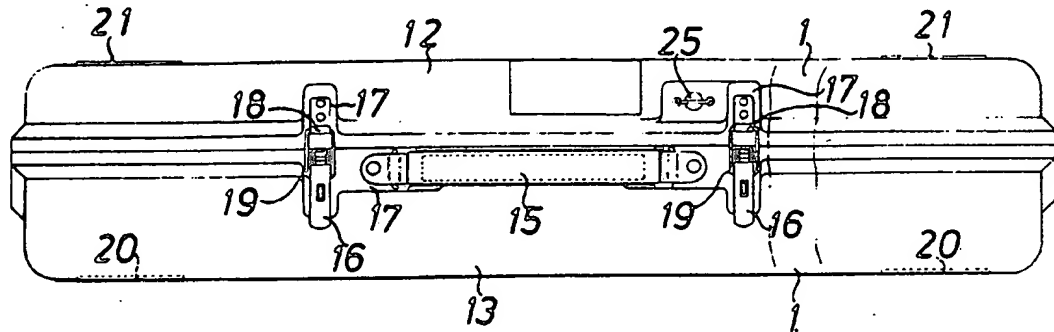


Fig. 1

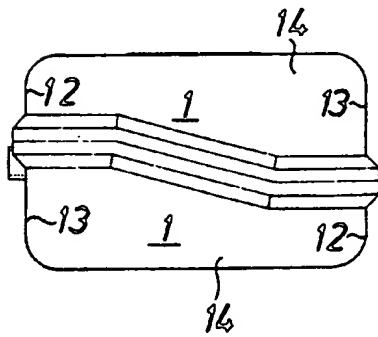


Fig. 2

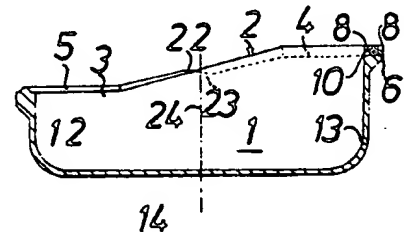


Fig. 4

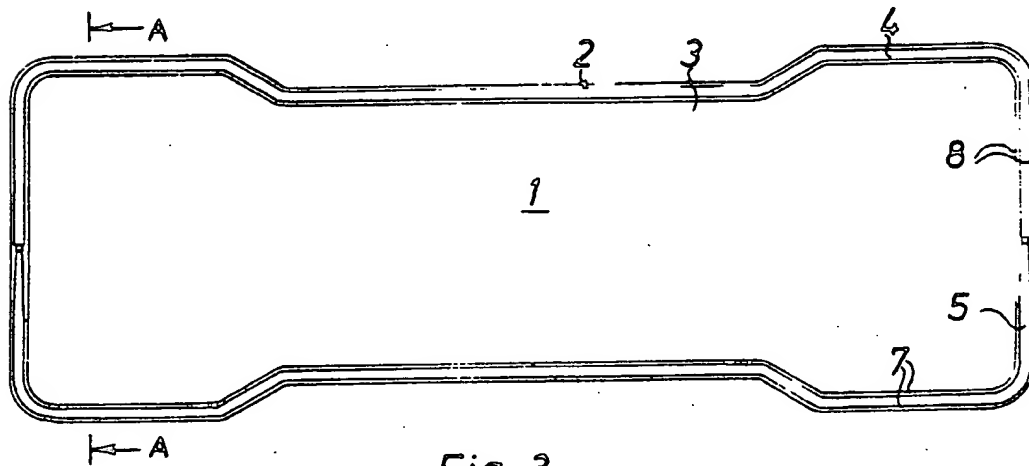


Fig. 3

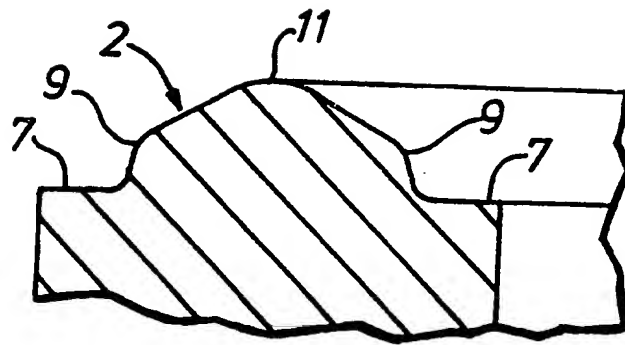


FIG. 5

SPECIFICATION

Boxes and cases and a method of making same

This invention relates to boxes and cases and to a method of making same.

5 Lidded boxes or cases of moulded plastics or other materials are known for storing and transporting articles such as weapons, range finders, or other military equipment, surveying and measuring instruments and apparatus, scientific
10 instruments and apparatus and the like, and generally comprise a box or case and a lid for closing the box or case, the lid being slightly larger than the box or case so that it overlaps the periphery of the box or case around the opening
15 therein. Such lidded boxes or cases are relatively expensive to manufacture because separate moulds are required for the box or case and the lid with the result that tooling costs, particularly when the box or case is fairly large in size, tend to
20 be high. Moreover, problems are encountered in providing suitable sealing means between the box or case and the lid where it is necessary that the lidded box or case be proof against the ingress of moisture under all kinds of different climatic
25 conditions, as may be the case for example with boxes or cases used for the storage and transport of articles, e.g., various kinds of military equipment, in the field.

The present invention has as its object to provide a lidded box or case which is such that tooling costs therefor can be reduced and which can readily be rendered proof against the ingress of moisture.

The present invention provides a lidded box or cases which comprises two substantially
35 identical hollow mouldings having cooperating surfaces around the openings therein which are adapted to interfit to positively locate one moulding relative to the other, said mouldings being placed one on top of the other with said
40 surfaces in abutting cooperative relationship.

The invention also provides a method of making a lidded box or case which comprises forming two substantially identical hollow mouldings having
45 cooperating surfaces around the openings therein which are adapted to interfit to positively locate one moulding relative to the other, and placing one moulding on top of the other with said surfaces in abutting cooperative relationship.

50 Said cooperating surfaces may comprise projections and recesses which interfit when one moulding is reversed with respect to the other to positively locate said mouldings relative to one another. For example, said surface of each
55 moulding may comprise a channel or recess which extends around substantially half the periphery of the moulding and a cooperating rib which extends around substantially the other half of the periphery of the moulding so that when one moulding is
60 reversed with respect to the other the rib of each moulding will be received in the channel or recess of the other moulding. Where it is desired that the box or case be sealed against the ingress of moisture, suitable sealing means, e.g., in the form

65 of a sealing strip of rubber or plastics material, may be provided in the bottom of each channel or recess so as to be sealingly engaged by the cooperating rib of the other moulding.

Said mouldings may be suitably hingedly
70 connected together and suitable latch or lock means may be provided whereby the mouldings can be latched or locked in closed position. Where sealing means is provided as aforesaid said latch or lock means are preferably of the toggle kind
75 which will draw said cooperating surfaces towards one another so that said ribs will exert a compressive force on said sealing means. One or more handles may be provided to facilitate carrying of the lidded box or case.

80 Where a single carrying handle is provided this may be located centrally of one side of the lidded box or case and midway between the top and bottom walls of the lidded box or case. However, if the junction between the box or case and the lid is
85 midway between the top and bottom walls then securing of the handle in the correct position becomes difficult. To overcome this problem each moulding may have two opposed side walls which are of different heights and opposed end walls
90 which progressively vary in height from the height of one of said side walls to the height of the other.

Preferably said mouldings are formed from glass-fibre reinforced plastics material although they could, if desired, be formed from any other
95 suitable mouldable material, wither reinforced or unreinforced.

The invention will be more particularly described with reference to the accompanying drawings, in which:—

100 Fig. 1 is a front view of a box or case according to the present invention,

Fig. 2 is an end view of the box or case of Fig. 1,

Fig. 3 is a plan view on a smaller scale of one of the mouldings forming the box or case of Fig. 1,

105 Fig. 4 is a sectional view on a larger scale taken on the line A—A of Fig. 3, and

Fig. 5 is an enlarged fragmentary view of that part of Fig. 4 shown in the broken circle marked D.

Referring to the drawings it will be seen that
110 the lidded box or case illustrated comprises two identical hollow mouldings 1 of glass-fibre reinforced plastics material having cooperating surfaces 2 around the opening 3 therein. Said cooperating surfaces 2 each comprise a channel or recess 4 extending around substantially half the
115 periphery of each moulding 1 and a cooperating rib 5 which extends around substantially the other half of the periphery of each moulding 1. A sealing strip 6 of soft elastomeric material is provided in the bottom of each channel or recess
120 4. Each rib 5 has planar surfaces 7 on either side thereof which cooperate with planar surfaces 8 on either side of the channel or recess 4 of the other moulding, shoulders 9 which abut inwardly
125 inclined side walls 10 of the cooperating channel or recess 4 and a crown portion 11 which engages the sealing strip 6 in the bottom of the cooperating channel or recess 4.

Each moulding 1 has opposed side walls 12

and 13 which are of different heights and end walls 14 which progressively increase in height over a part of the length thereof from the height of the side wall 12 to the height of the side wall 13.

- 5 In this way the junction between the two mouldings is not on the median centre line of the lidded box or case and this enables a carrying handle 15 to be secured to one of the walls 13 on the median centre line of the lidded box or case and also facilitates the mounting of toggle fasteners 16 and toggle-type hinges (not shown). Integrally moulded bosses 17 are provided for the reception of the carrying handle 15, fasteners 16 and toggle-type hinges are identical to the toggle fasteners 16 except that the hook portions 18 thereof are closed around the loop portions 19 so that the two parts are permanently secured together.

- 20 In the embodiment shown air vent means 25 (Fig. 1) is provided to allow for pressure equalisation when there is a pressure differential between the interior and exterior of the box or case, such as during air transit.

- 25 In order that the lidded box or case may be stackable with similar lidded boxes or cases and can be located relative thereto, each box or case moulding may have one or more recesses 20 in the bottom wall thereof and each of the lid mouldings may have one or more cooperating projections 21 on the top wall thereof. To obtain these recesses 20 and projections 21 the mould may have one or more recesses in the bottom thereof which forms said projections 21 and into the or each of which a mould insert of suitable thickness can be inserted so as to form the recesses 20.

- 40 To prevent a double thickness of sealing strip 6 at each of the points of transition between a channel or recess 4 and a rib 5 the end of each rib is tapered as shown at 22 in Fig. 4 and the bottom of each channel or recess is inclined as shown at 23 in Fig. 4 and extends to just beyond the centreline 24. Although not shown, the sealing strip 6 is tapered at each of its ends so that there will be substantially an even thickness of sealing strip around the whole of the periphery of the lidded box or case when the lid is closed.

- 45 Suitable lining or padding (not shown), e.g., of moulded rubber or plastics material, may be provided within the lidded box or case for supporting and protecting against accidental damage an article for which the box or case is designed.

- 50 It will readily be appreciated from the foregoing that because the lidded box or case of the present invention is formed from substantially identical mouldings (the only difference being the recesses 20 and projections 21 which are catered for by mould recesses and a mould inserts as aforesaid) only a single mould is required with a consequent reduction in tooling costs. Moreover, by virtue of the design of the channels or recesses 4 and the cooperating ribs 5 a lidded box or case which is proof against the ingress of moisture can readily be provided simply by inserting suitable sealing

strip 6 in the channels or recesses 4.

CLAIMS

1. A lidded box or case comprising two substantially identical hollow mouldings having cooperating surfaces around the openings therein, said cooperating surfaces being adapted to interfit to positively locate one moulding relative to the other, said mouldings being positioned one on top of the other with said surfaces in abutting cooperative relationship.

2. A lidded box or case according to claim 1, wherein said cooperating surfaces comprise projections and recesses which interfit when one moulding is reversed with respect to the other to positively locate said mouldings relative to one another.

3. A lidded box or case according to claim 2, wherein said surface of each moulding comprises a channel or recess which extends around substantially half the periphery of the moulding and a cooperating rib which extends around substantially the other half of the periphery of the moulding whereby when one moulding is reversed with respect to the other the rib of each moulding will be received in the channel or recess of the other moulding.

4. A lidded box or case according to claim 3, wherein sealing means is provided in the bottom of each of said channel or recess so as to be sealingly engaged by the cooperating rib of the other moulding.

5. A lidded box or case according to claim 4, wherein each said sealing means comprises a strip of rubber or plastics material.

6. A lidded box or case according to any one of the preceding claims, wherein said mouldings are hingedly connected together.

7. A lidded box or case according to any one of the preceding claims, wherein latch or lock means is provided whereby said mouldings can be latched or locked in closed position.

8. A lidded box or case according to claim 7, when dependent upon claim 4 or 5, wherein the or each said latch or lock means is of the toggle kind and is adapted to draw said cooperating surfaces towards one another so that said ribs will exert a compressive force on said sealing means.

9. A lidded box or case according to any one of the preceding claims, having at least one handle to facilitate carrying thereof.

10. A lidded box or case according to claim 9, having a single carrying handle located centrally of one side thereof.

11. A lidded box or case according to any one of the preceding claims, wherein each of said mouldings has two opposed side walls and two opposed end walls and wherein the two opposed side walls are of different heights and the two opposed end walls progressively vary in height from the height of one of said side walls to the height of the other.

12. A lidded box or case according to any one of the preceding claims, having said mouldings formed from glass-fibre reinforced plastics

material.

13. A method of making a lidded box or case,
the method comprising forming two substantially
identical hollow mouldings having cooperating
5 surfaces around the openings therein which are
adapted to interfit to positively locate one
moulding relative to the other, and placing one
moulding on top of the other with said surfaces in

abutting cooperative relationship.

10 14. A lidded box or case substantially as herein
described with reference to the accompanying
drawings.

15 15. A method of making a lidded box or case,
substantially as herein described with reference to
the accompanying drawings.

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